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PENCIL-MAKING AT KESWICK.

SITUATED in a slightly undulating valley, with the lake of glorious Derwentwater in the immediate vicinity, backed by Skiddaw, who rears his hoary peaks to an elevation of more than three thousand feet, and traversed by the river Greta, endeared to every lover of the English language by its literary associations, is the pretty straggling town of Keswick. Were this spot "unknown to fame," from the irresistible attractions which its neighbourhood presents to all lovers of the sublime and beautiful, there would be an interest felt in the spot by at least some sections of the community, as having furnished them with the means of embodying their own conceptions of taste and fancy by the pencil of the artist. And it is to Keswick in this respect that we have now to invite the attention of our reader.

The pencil-works of Messrs. Banks, Son, and Co., which we have to visit, are seated on the banks of the Greta, the waters of which furnish the motive power for all the machinery of the establishment. The factory itself consists of a house of several stories, in the premises connected with which the cedar

A man then takes one of the thin planks, which has already been prepared, and is of the length of three or four pencils, and wide enough, perhaps, for a dozen, and, by means of a machine, of which we furnish an illustration (fig. 1), he cuts it into thin oblong strips; and, while this is being accomplished, he regulates with his feet the action of another circular saw, placed at right angles to the one first mentioned, which cuts in the wood the grooves for the insertion of the lead. As, however, the lead passes only along a portion of a pencil, the length and position of a groove has to be regulated accordingly. One-half of the pencil having thus been prepared, a smaller oblong piece is also cut, which may fit against the first and complete the whole.

The material employed in the formation of lead-pencils, and which is improperly called black-lead, is a compound of carbon and iron, and is found in various situations, such as among mountains, in beds of quartz, and in masses of calcareous earth, often looking like stones in a bed of gravel. It generally occurs in kidney-shaped pieces, varying in size from

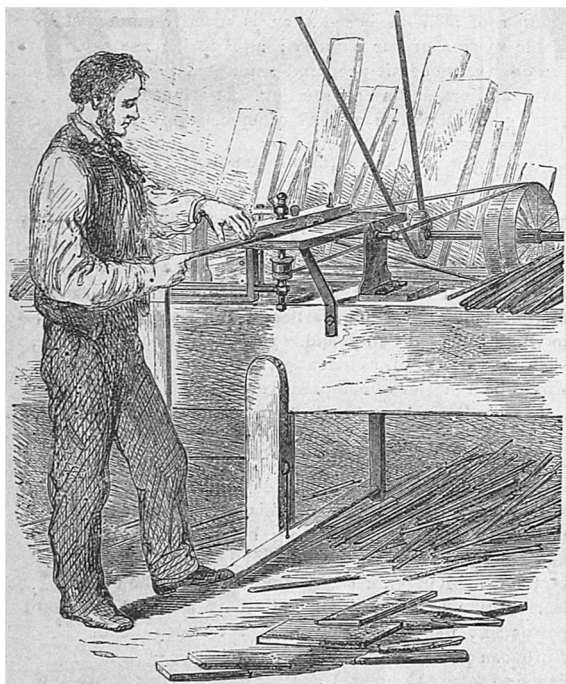


FIG. 1.—CUTTING AND GROOVING PENCILS.

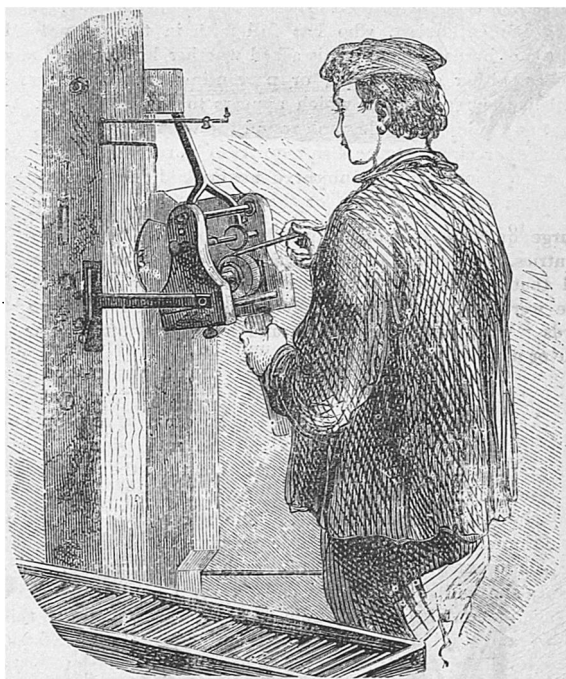


FIG. 2.—LETTERING PENCILS.

logs are stored, after their voyage from South America, for the service of the works; amounting in the course of a year to no less than from five thousand to six thousand cubic feet, and serving for the manufacture of some five or six millions of cedar pencils.

The first process in their formation is the cutting up of the logs into various sizes, according to the lengths and kinds of pencils to be made. On entering the workshop in which this is carried on, the senses are variously affected by the different objects that present themselves. The eye is confused by the machinery in action, and the bands and spindles by which motion is given to the several parts; the ear is filled with the hum and *skurr* of the saws; and the nose is irritated by the flood of fine wood-dust which fills the room, and which, though at first not unpleasant, before long occasions annoyance, and even nausea to one unaccustomed to it.

At the end of this room the methods may be witnessed by which the cutting up of the logs of cedar into proper lengths is effected by means of a circular saw, the pieces being afterwards reduced to thin planks by another instrument.

that of a pea upwards. The most celebrated black-lead mine, is that in Borrowdale, Cumberland, six miles from Keswick, which was accidentally discovered in the reign of Queen Elizabeth, and proved to be of the purest carbon next to the diamond. When its commercial value was first ascertained, the proprietors found it very difficult to guard the mine from depredations; the practice of robbing it having become at length so common, that persons living in the neighbourhood were said to have made large fortunes by secreting and selling the mineral. About a century ago, a body of miners broke into the mine by main force, and held possession of it for so long a time as to succeed in abstracting from it an enormous quantity of lead, which they sold at so low a price, that the proprietor was induced to buy it up in order to restore the old rate of prices. Some years since the mine failed, and very little or anything has been obtained from it since, though there is Borrowdale lead still in existence. Messrs. Banks, Son, and Co., are part proprietors of the mine, their share at the last and final division of the produce being about five hundred pounds' weight of the lead. When lead was obtained

from the Borrowdale mine, it was sent to London for sale, and being bought by manufacturers at Keswick, it was sent back again, and thus the town maintained its reputation for the production of pencils.

When the lead is of sufficient size, the processes in its preparation are greatly simplified, since all smaller pieces have to be cut up, pounded down, and mixed together. With this

required being to remove the foreign ingredients from the exterior.

The wood having been thus far prepared, it is given to a sorter, who selects from it those pieces which have knobs and irregular parts; these are put aside for fire-wood. On seeing the heaps of wood thus regarded as useless, we suggested that it might have been preserved for the formation of cedar

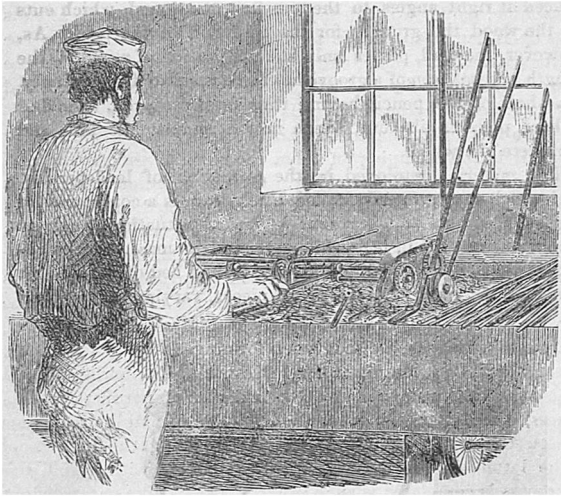


FIG. 3.—ROUNDING PENCILS.

a large quantity is mingled which is obtained from other countries, and as little of the larger sort remains, artists now find that pencils are very inferior in quality to what they once were, and that though they may be stamped with the words "Warranted pure Cumberland lead," they often have little or none of it in them.

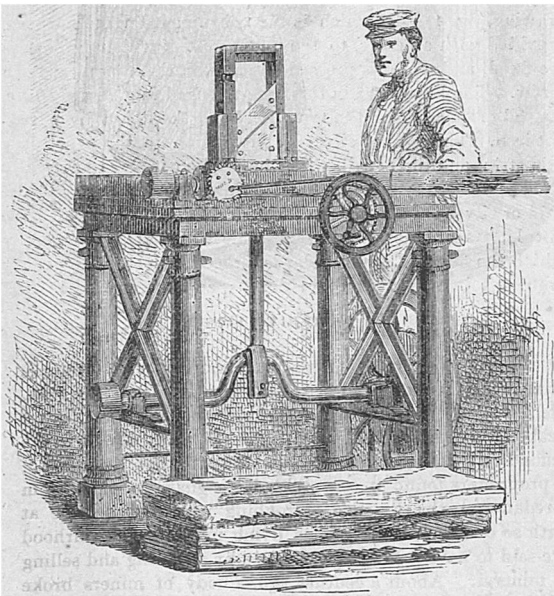


FIG. 5.—MACHINE FOR CUTTING THE ENDS OF PENCILS.

The inferior qualities of lead are intermingled with grit and particles of sand, which have to be removed. For this purpose the material is crushed between iron rollers, sifted, cleansed, ground, heated in close retorts, and compressed into oblong slabs; these operations being carried on in another part of the establishment. In the case of the pure Borrowdale lead, these processes are omitted, the only preliminary step that is

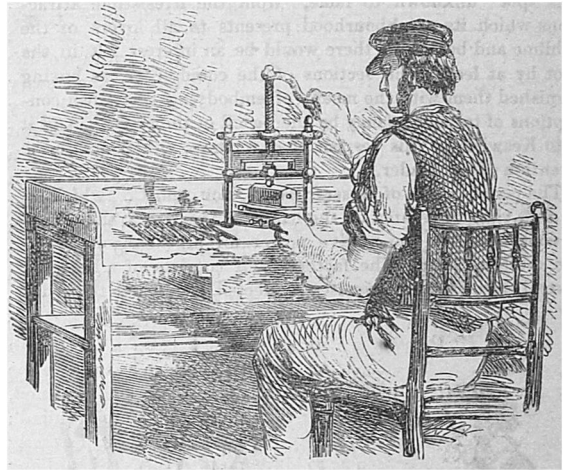


FIG. 4.—GILDING PENCILS.

matches; but according to present usage a great deal of good material is sold as firewood to the women of the neighbourhood. The cedars which have been prepared are now sent up stairs to be "set out," as it is called, and are then marked so as to guide the men in the insertion of the lead in the grooves as to where the pencil shall end.

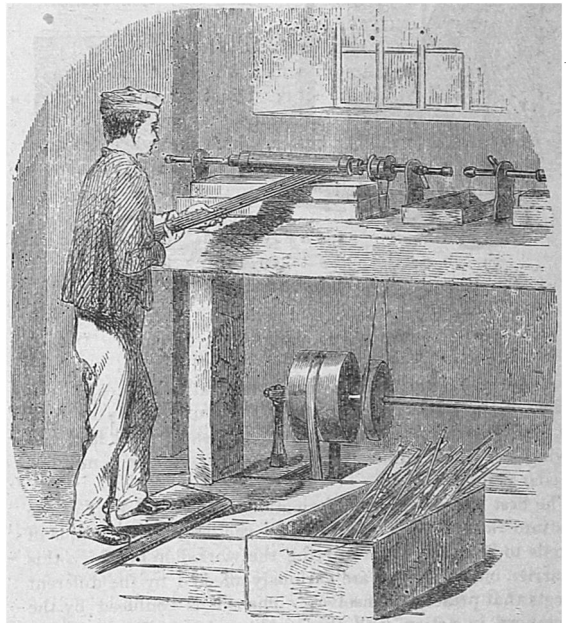


FIG. 6.—POLISHING PENCILS.

When the lumps of lead are taken from the cask, they are glued to a board, in order to secure them in a position in which they may be sawed into thin slices or scantlings, care being taken in this process to occasion as little waste as possible. Judgment has now to be exercised in the selection of leads of the right degrees of hardness, so that when they are made up it may not be found that a pencil is an H at one end and a

as at the other. For the hardest pencils the lead is prepared chemically, and for the softest an increased thickness of lead is inserted. The dust and scraps are preserved for the formation of inferior qualities of goods.

We next visit the benches at which the lead is fitted into the grooves in the strips of cedar. The men here at work present a peculiar appearance. They are dressed in dark blue smocks,—this being the general costume of the place,—with loose sleeves fitted tight at the wrist, and are sitting at very black shining tables. The men's hands, and the tools with which they are engaged, as well as most of the furniture of the apartment, look as if they had been fresh polished every morning by the servants, by the same processes by which they cleansed the grates and stoves; while their faces often exhibit tints and streaks of different colours. Each workman has a number of the sticks of cedar, in which the grooves have been cut, and a number of slices of lead just as they appear after the sawing. He then takes one of the slices, and having seen that it is not too broad to enter the groove—for if this be the case he rubs it down to the proper dimensions on a rough stone which lies in front of him—he dips it in a pot of glue which is kept hot just beside him, and then presses it into the grooves. He then gives a scratch to the lead on a level with the surface of the wood, and breaks it off, so as to leave the groove properly filled. In the making of a single pencil, perhaps as many as three or four slice lengths are required; but however many there may be, each slice is fitted exactly endwise to the other, so as to leave no intervals. Should any of the lead afterwards project above the groove in the cedar, it is scraped off with a knife; this is called *shutting*. The rods being thus filled, are conveyed to the fastener-up. This operation is carried on with surprising dexterity. The workman glues the cedar-covers or slips over the filled rods, and having got a certain number arranged alongside of each other, he fixes them tightly together, and lays them aside to dry.

The pencil now presents the appearance of an oblong cedar stick, very rough and long, and it is removed down stairs to be rounded. The machine by which this is accomplished (fig. 3) is very curious, and is found only in this establishment. A man takes in each hand one of the long sticks, and places them between the pairs of small wheels exhibited in the illustration, and which are situated just far enough apart to admit the pencil. By these means they are brought under the action of a revolving cutter, which is made so as to act with a gauge and a chisel blade, and in a moment we see the end of the pencil passing out rounded to a nicety. By this simple and efficient machine, a man will round from 600 to 800 dozens of pencils a day. This process being completed, the long sticks are taken to the floor from which they were brought in order to be finally smoothed with a plane and polished. To effect this, benches are provided, at each of which two boys are at work, who take up some five or six sticks in their hands, and then pull them up and down between a roller covered with leather and a leather board (fig. 6); by these means the pencils are made to present the appearance of nice smooth walking-sticks, some thousand dozen being polished a day by each boy.

The fashion of varnishing pencils has come up very recently. It first began with inferior kinds, but it is now adopted with the best, and many sorts of pencils will indeed hardly sell without it. It brings out the colour of the cedar, and gives a deep rich hue to the wood, while it serves at the same time to prevent the pencil getting black and dirty during the cutting, and preserves them uniformly clean.

The polishing being completed, the next step is to cut the rods into lengths. This is accomplished by the aid of a circular saw, which insinuates itself through an aperture in a table, and against which a boy presses a row of pencils, the proper length being determined by a gauge. This cross-cutting, however, is not sufficient to complete them with a proper degree of nicety, and to finish them they are handed to another workman. In front of him is a bench, from out of which projects a little bit of wood, on the top of which is a piece of iron having holes to fit different sizes of pencils, and then

with a razor-blade fixed in a wooden handle, he cuts the top off so as to leave a perfectly smooth edge. The wood ends are finished on a more wholesale principle, by the aid of what may be called a guillotine, of which we furnish an illustration (fig. 5). This instrument is used only by Messrs. Banks and Son, and consists of four iron pillars supporting an iron table, at the top of which is a blade fixed diagonally; this being set in motion by a crank at the lower part of the machine, moves up and down. All that the boy who attends its operation has to do, is to put five or six pencils under the grooves made for them, and down comes the blade, so that the heads are nicely finished without further trouble. A hundred dozen may easily be cut by this guillotine in a day.

The last operation in the history of the manufacture of a pencil is the stamping on them the name of the maker, and the indication of their quality. Of the ingenious instrument by which this part of the work is accomplished, an illustration is furnished by our artist (fig. 2). The workman holds a dozen or two of pencils in his left hand, and then, taking them one by one, he puts an end of each on to a grooved wheel which is rapidly revolving, and by the movements of this wheel the pencil is carried onward. Above this wheel is another, around which are raised types forming the words "Banks, Son, and Co., Manufacturers, Keswick, Cumberland," and also the letters significant of their degree of hardness or softness, the latter being moveable. The pencil cannot pass between these two wheels without receiving the impress of the letters in the cedar; and the rapidity with which the process is completed is such, that it passes like an arrow out of sight, and is instantly heard to rattle down the wooden tube prepared for its reception on the other side into a box below. Some idea may be formed of the ease and expedition with which this is accomplished, from the fact, that from 120 to 200 pencils may be lettered in a minute. At the lower part of the machine is the box in which the pencils are kept which are about to undergo the process.

Many pencils are now finished, but some have gilt letters instead of the mere impress on the wood. When this is done, they are taken to a table close by—of which, also, we give a drawing (fig. 4)—on which is the instrument for the purpose, provided with a heater, to the under part of which the letters are fixed, and which is pressed down upon them by means of a screw. The letters are in this case arranged in a straight line, instead of on a wheel, the type-box being kept hot by a red-hot iron. The gold or silver leaf is put on to the pencil in a thin strip, and the pencil, with the leaf on it, being carefully fixed under the type, it is pressed down by a screw, and the gold or silver is imbedded in the cedar. The pencils that have gilt letters are usually coloured black, yellow, or blue, by which the fine tint of the cedar is altogether lost. The pencils are now taken and tied up in dozens, and afterwards in half grosses.

We might follow the subsequent career of a bundle of pencils, and find that it was not without interest. One, perhaps, is transferred to the studio of the artist, another to the boudoir of a lady, and a third may embody the rising genius of a youthful prodigy, who sketches horses with human heads to the infinite delight of his mother, who is assured, as she emphatically expresses it, that he will be "somebody some day." We might philosophise on the permanence which is given to fleeting thoughts of ideal beauty in their representation by the artist, who by its aid secures to himself and for others what would otherwise be but the evanescent conceptions of the hour. And we might conclude by moralising on the fact, that as it is by the wear and tear and destruction of the agent that its worth is developed, so it often is that men, in striving and labouring for society and the world, are themselves exhausted and consumed, and the elements of their physical constitution pass away, to mingle with, and to be absorbed into, the universe at large. But we leave these considerations to the meditation of our readers, as may suit their individual taste and feeling; our work being discharged in having, we hope, thrown some light on the history of the rise, progress, and decay of a cedar pencil.